

WHAT IS CLAIMED IS:

1           1. A system for loading configuration data into a programmable device,  
2 the system comprising:  
3                 a configuration word register comprising a plurality of configuration blocks;  
4                 a plurality of configuration inputs selectively coupled with each of the  
5 plurality of configuration blocks and adapted to communicate configuration data; and  
6                 a plurality of command inputs adapted to independently enable loading of at  
7 least one of the plurality of configuration blocks, wherein the plurality of configuration  
8 blocks are adapted to simultaneously load configuration data via the plurality of configuration  
9 inputs in response to the plurality of command inputs.

1           2. The system of claim 1, wherein each of the plurality of configuration  
2 blocks is coupled with one of the plurality of command inputs.

1           3. The system of claim 1, wherein at least one configuration block  
2 comprises a plurality of bits equal in number to the number of configuration inputs.

1           4. The system of claim 3, wherein at least one configuration block  
2 comprises one or more bits, such that the total number of bits is less than the number of  
3 configuration inputs.

1           5. The system of claim 1, further comprising:  
2                 a configuration memory having a plurality of memory locations and coupled  
3 with the configuration word register, wherein the configuration memory is adapted to load  
4 configuration data from the configuration word register.

1           6. The system of claim 1, further comprising:  
2                 a configuration mode input; and  
3                 a configuration controller coupled with the configuration mode input, wherein,  
4 in response to a first state of the configuration mode input, the configuration controller is  
5 adapted to enable the plurality of configuration blocks to simultaneously load configuration  
6 data via the plurality of configuration inputs in response to the plurality of command inputs,  
7 and, in response to a second state of the configuration mode input, the configuration  
8 controller is adapted to enable loading of configuration data into the configuration word  
9 register via an alternate coupling with configuration data.

1                   7.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is via the plurality of configuration inputs.

1                   8.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is via the plurality of command inputs.

1                   9.     The system of claim 6, wherein the alternate coupling with  
2 configuration data is adapted to simultaneously load a one bit of configuration data into each  
3 of the configuration blocks.

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1                   10.    A method for loading configuration data for a configuration word  
2 comprised of a plurality of configuration blocks into a programmable device, the method  
3 comprising:

4                   receiving a command word via a plurality of command inputs designating a  
5 first subset of the plurality of configuration blocks;

6                   receiving a data word comprising a portion of the configuration data for  
7 configuration word via a plurality of configuration inputs; and

8                   simultaneously loading the data word into each one of the subset of  
9 configuration blocks designated by the command word.

1                   11.    The method of claim 10, wherein the steps of receiving the command  
2 word, receiving the data word, and loading the data word are repeated for a second data word  
3 and a second command word designating a second subset of the plurality of configuration  
4 blocks.

1                   12.    The method of claim 11, wherein the second subset of the plurality of  
2 configuration blocks does not intersect the first subset of the plurality of configuration blocks.

1                   13.    The method of claim 10, wherein the command word comprises a  
2 plurality of command bits, such that each command bit is associated with one of the plurality  
3 of configuration blocks.

1                   14.    The method of claim 10, wherein at least one configuration block in  
2 the first subset of the plurality of configuration blocks comprises a plurality of bits equal in  
3 number to the number of configuration inputs.

1           15.     The method of claim 10, further comprising:  
2                 loading configuration data from the plurality of configuration blocks into a  
3         memory location in a configuration memory.

1           16.     The method of claim 10, further comprising:  
2                 receiving a configuration mode via a configuration mode input;  
3                 enabling the first subset of the plurality of configuration blocks to  
4         simultaneously load configuration data via the plurality of configuration inputs in response to  
5         a first state of the configuration mode; and  
6                 loading configuration data into the plurality of configuration blocks via an  
7         alternate communication means in response to a second state of the configuration mode.

1           17.     The method of claim 16, wherein the alternate communication means  
2         is via the plurality of configuration inputs.

1           18.     The method of claim 16, wherein the alternate communication means  
2         is via the plurality of command inputs.

1           19.     The method of claim 16, wherein loading configuration data into the  
2         plurality of configuration blocks comprises:

3                 simultaneously loading one bit of configuration data into each of the plurality  
4         of configuration blocks.

1           20.     The method of claim 10, further comprising:  
2                 testing the programmable device loaded with the configuration data.

1           21     The method of claim 20, further comprising:  
2                 repeating with a second set of configuration data the steps of receiving a  
3         command word, receiving a data word, loading the data word, and testing in order to test the  
4         programmable device loaded with the second set of configuration data.

1           22.     A system having a plurality of devices, the system comprising:  
2         a programmable device including:

3                   a configuration word register comprising a plurality of configuration  
4   blocks,  
5                   a plurality of configuration inputs selectively coupled with each of the  
6   plurality of configuration blocks and adapted to communicate configuration data, and  
7                   a plurality of command inputs adapted to independently enable at least  
8   one of the plurality of configuration blocks, wherein the plurality of configuration blocks are  
9   adapted to simultaneously load configuration data via the plurality of configuration inputs in  
10   response to the plurality of command inputs; and  
11                  an interface for connecting the programmable device with a configuration data  
12   source.

1                  23.   The system of claim 21, further including:  
2                   a configuration source having a set of configuration data and adapted to  
3   communicate the set of configuration data with the programmable device.

1                  24.   The system of claim 23, wherein the configuration source includes a  
2   plurality of different sets of configuration data and is adapted to test the programmable device  
3   by successively communicating each of the plurality of different sets of configuration data  
4   with the programmable device.